

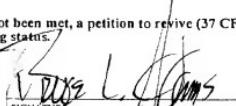
FORM PTO-1390 (REV. 11-98)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				P010-4176 (PCT)
INTERNATIONAL APPLICATION NO. PCT/GR99/00024		INTERNATIONAL FILING DATE 5 July 1999 (05.07.99)		U.S. APPLICATION NO. (if known; see 37 CFR 1.51) <b>09/743291</b>
PRIORITY DATE CLAIMED 9 July 1998 (09.07.99)				
TITLE OF INVENTION COLLECTOR OF UNUSED WATER				
APPLICANT(S) FOR DO/EO/US Dimitrios NAOUM				
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information.				
<p>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371.</p> <p>2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371.</p> <p>3. <input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).</p> <p>4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.</p> <p>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)).</p> <ol style="list-style-type: none"> <li><input type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau).</li> <li><input checked="" type="checkbox"/> has been transmitted by the International Bureau.</li> <li><input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</li> </ol> <p>6. <input checked="" type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)).</p> <p>7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))</p> <ol style="list-style-type: none"> <li><input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau).</li> <li><input type="checkbox"/> have been transmitted by the International Bureau.</li> <li><input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</li> <li><input type="checkbox"/> have not been made and will not be made.</li> </ol> <p>8. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</p> <p>9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</p> <p>10. <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</p>				
Items 11. to 16. below concern document(s) or information included:				
<p>11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</p> <p>12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</p> <p>13. <input type="checkbox"/> A FIRST preliminary amendment.</p> <p><input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.</p> <p>14. <input type="checkbox"/> A substitute specification.</p> <p>15. <input type="checkbox"/> A change of power of attorney and/or address letter.</p> <p>16. <input checked="" type="checkbox"/> Other items or information:</p>				
<p>Form PCT/RO/101 Form PCT/IB/301 Form PCT/IB/304</p> <p>INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)</p> <p>FORM PCT/ISA/210</p> <p>CERTIFIED COPY OF GREEK PATENT APPLN. NO. 980100268</p>				

US

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Annex US.II, page 2

## PCT Applicant's Guide – Volume II – National Chapter – US

U.S. APPLICATION NO. (If known) <u>09/745271</u>		INTERNATIONAL APPLICATION NO. <u>PCT/CR99/00024</u>	ATTORNEY'S DOCKET NUMBER <u>P010-4176 (PCT)</u>																								
<p><input checked="" type="checkbox"/> The following fees are submitted:</p> <p><b>BASIC NATIONAL FEE (37 CFR 1.492 (e) (1) - (5)) :</b></p> <p>Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report prepared by the EPO or JPO. .... <u>\$970.00</u></p> <p>International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO ..... <u>\$840.00</u></p> <p>International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... <u>\$760.00</u></p> <p>International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) ..... <u>\$670.00</u></p> <p>International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) ..... <u>\$96.00</u></p>																											
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<p>Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>CLAIMS</th> <th>NUMBER FILED</th> <th>NUMBER EXTRA</th> <th>RATE</th> </tr> <tr> <td>Total claims</td> <td>7 - 20 =</td> <td>0</td> <td>X <u>\$18.00</u></td> </tr> <tr> <td>Independent claims</td> <td>1 - 3 =</td> <td>0</td> <td>X <u>\$78.00</u></td> </tr> <tr> <td colspan="2"><b>MULTIPLE DEPENDENT CLAIM(S) (if applicable)</b></td> <td></td> <td>+ <u>\$260.00</u></td> </tr> <tr> <td colspan="2"></td> <td></td> <td><b>\$270.00</b></td> </tr> <tr> <td colspan="2"></td> <td></td> <td><b>TOTAL OF ABOVE CALCULATIONS = \$1130.00</b></td> </tr> </table>				CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	Total claims	7 - 20 =	0	X <u>\$18.00</u>	Independent claims	1 - 3 =	0	X <u>\$78.00</u>	<b>MULTIPLE DEPENDENT CLAIM(S) (if applicable)</b>			+ <u>\$260.00</u>				<b>\$270.00</b>				<b>TOTAL OF ABOVE CALCULATIONS = \$1130.00</b>
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<p>Reduction of 1/2 for filing by small entity, if applicable. A Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28).</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td><b>SUBTOTAL = \$ 565.00</b></td> </tr> <tr> <td>Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).</td> </tr> <tr> <td><b>TOTAL NATIONAL FEE = \$ 565.00</b></td> </tr> <tr> <td>Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +</td> </tr> <tr> <td><b>TOTAL FEES ENCLOSED = \$ 565.00</b></td> </tr> <tr> <td><b>Amount to be refunded</b> <input type="checkbox"/></td> </tr> <tr> <td><b>charged</b> <input type="checkbox"/></td> </tr> </table>				<b>SUBTOTAL = \$ 565.00</b>	Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).	<b>TOTAL NATIONAL FEE = \$ 565.00</b>	Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +	<b>TOTAL FEES ENCLOSED = \$ 565.00</b>	<b>Amount to be refunded</b> <input type="checkbox"/>	<b>charged</b> <input type="checkbox"/>																	
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<p>a. <input checked="" type="checkbox"/> A check in the amount of <u>\$ 565.00</u> to cover the above fees is enclosed.</p> <p>b. <input type="checkbox"/> Please charge my Deposit Account No. <u>01-0268</u> in the amount of <u>\$</u> to cover the above fees. A duplicate copy of this sheet is enclosed.</p> <p>c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>01-0268</u>. A duplicate copy of this sheet is enclosed.</p>																											
<p><b>NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.</b></p>																											
<p>SEND AIR CORRESPONDENCE TO</p> <p>Bruce L. Adams, Esq. Adams &amp; Wilks 50 Broadway-31st Fl. New York, NY 10004</p>																											
 <p>SIGNATURE</p> <p>Bruce L. Adams</p>																											
<p>NAME _____</p> <p>25,386</p> <p>REGISTRATION NUMBER _____</p>																											

Attorney's Docket No. P010-4176 (PCT)

Applicant or Patentee: NAOUM, Dimitrios

Serial or Patent No.: \_\_\_\_\_

Filed or Issued: \_\_\_\_\_

For: COLLECTOR OF UNUSED WATER

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS  
(37 CFR 1.9(f) and 1.27(b)) -INDEPENDENT INVENTOR**

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled \_\_\_\_\_

COLLECTOR OF UNUSED WATER

described in

- the specification filed herewith.  
 application serial no. \_\_\_\_\_, filed \_\_\_\_\_.  
 patent no. \_\_\_\_\_, issued \_\_\_\_\_.

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- no such person, concern, or organization  
 persons, concerns or organizations listed below\*

\*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27).

FULL NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

[ ] INDIVIDUAL [ ] SMALL BUSINESS CONCERN [ ] NONPROFIT ORGANIZATION

FULL NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

[ ] INDIVIDUAL [ ] SMALL BUSINESS CONCERN [ ] NONPROFIT ORGANIZATION

FULL NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

[ ] INDIVIDUAL [ ] SMALL BUSINESS CONCERN [ ] NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may

jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAOUM, Dimitrios

Name of inventor

  
Signature of Inventor

Date 15th of December 2000

Name of inventor

  
Signature of Inventor

Date \_\_\_\_\_

Name of inventor

  
Signature of Inventor

Date \_\_\_\_\_

Collector of Unused Water

The invention pertains to a collector of unused water consisting of the head and the remaining part. The head consists of two spherical sections firmly connected to each other: 1) a small one which constitutes the upper part of the head of the collector and is simultaneously a) a regulator of the incoming water, having in its center a through hole whose lips are curved at the top, b) a water tank, having an inlet and an outlet with overflow for the filling of the inlet pipe with water and c) a water disturbance absorber from below. 2) A big one, which is the base of the head of the collector, carrying four anti-skid legs of adjustable height for the levelling of the head of the collector and an open-turn pipe which is connected to the water tank which is in the upper part of the head with a small cross-section pipe.

The remaining part consists of a very flexible pipe connecting the head to the drain, which consists of a pipe inside which there is an open-turn elbow with an extension along the run of the pipe and a side inlet. In the upper part there is an overflow valve. The drain is connected through a flexible pipe to the water storage tank.

From time to time, attempts have been made to lower water consumption, especially that of the households. Mechanisms and ways have been invented, some of which lower the pressure of the water and create spray by inserting air in the pipes, thus creating the impression of quantity while in others there are reduced cross-sections in the water intake pipes (thermomixing sluice valves) where the typical position for use is either open or close, making it impossible for the user to choose another position in between. There are also electromechanical or mechanical switches at the end of the tap.

These mechanisms have the following essential drawbacks:

- 1) Spray filters need frequent maintenance (screen cleaning.)

- 2) The reduced cross-sections in the thermomixing sluice valves do not provide economy, they just reduce the waste since they usually function only when fully open.
- 3) Taps with electromechanical mechanisms cost a lot to buy, require an electric installation all the way to the tap and cannot respond to the multiplicity of household uses. They are, however, suitable for public places with simple uses (washing of hands) and are installed mainly for hygienic purposes.
- 4) The mechanical mechanisms at the end of the tap not only are they not convenient for the user (the switch is activated by a flexible foil, or something similar, hanging from the tap and hampers most uses) but they also inflict hydraulic damage on the installation due to their abrupt opening and closing.

The dominant mechanisms for water economy to-date are those which create spray water in a variety of ways, giving the impression of quantity. The water saved in this way is little because 1) after the first impressions have subsided, the user seeks the weight of the water he was used to, which leads to a prolongation of the time of the use or the increase in the water flow; 2) the main problem, which is the leak of pure water during the intermediate stages of a use, is not countered.

Usually, the user either does not reach to turn off the tap during the time he is not using the water, e.g., when washing his hands or shaving, or does not have the time to do so because the time periods are too short, e.g., when washing his face or because he does not wish to alter the water mix in simple taps. The result is that the water wasted in the intermediate stages, when it is not used, is, as a rule, more than the water needed for the use itself. A noteworthy case of water wasting is the one in which we turn on the hot water switch and wait for it to come from the heater. If, furthermore, we have a solar heater, then the waste is especially big.

Thus was born the idea of collecting this pure unused water to be used elsewhere. This is achieved with the collector of unused water, through which the water is diverted to a tank or a storage place in order to be used.

Drawing (1) shows the collector of unused water. Its function is illustrated below. The water passes through the regulator (1) of the incoming water flow. The lips of the regulator are curved so that the water enters the pipe (2) without having its flow obstructed even in the event that the column of water is not exactly in the center or  
5 diverses a little with the increase of the water supply if the tap has a declination. Then the water, with the power it carries, fills the open-turn elbow (2), the elastic pipe (3) and the open-turn elbow (5). As soon as this happens, there is pressure and we have an intense water rip in the mouth of the open turn elbow (2). The lips of the mouth of the open turn elbow (2) are slightly curved (4) so that the rip is  
10 reflected to and damped in the lower part (6) of the small spherical section of the head of the collector. Then we have an outflow of water from the extension of the open-turn elbow (5). At the same time, tank (7) is filled through pipe (8) and when this is done there is an outflow of water from the overflow pipe (9). The waste pipe (10) plays a triple role: 1) It leads the collected water, through an elastic pipe or  
15 without one, to a storage place; 2) It does not allow an uptake (during the stoppage of the water column from the tap to the head of the collector) of the water inside the elastic pipe; 3) it has on its upper part an overflow valve (11) which when closed does not allow any more water inside the drain pipe (10) when the water storage place is full.

20

The stage of the creation of the column of water from the turning on of the tap until the outflow from the open-turn pipe (5) lasts about 0.35 sec. During the stoppage stage, e.g., when we put our hands under the tap in order to rinse them, the dirty water cannot enter the head of the collector for two reasons: 1) the water does not  
25 have the power to push the water which is inside the open-turn elbow (2) and the elastic pipe (3) since it runs diffusely and 2) with the stoppage of the water column, the water inside the elastic pipe (3) returns and empties over the lips (4) of the open-turn elbow (2), flushing from the head of the collector the dirty water running at the moment. Even when the flushing lasts a long time, dirty water cannot enter because

- there still is water in part of pipe (3) and in the open-turn elbow (2) (a pipette is created.) The level of the remaining water does not reach the lips (4) of the open-turn elbow (2), but stays lower, because the great speed of the water during the emptying of pipe (3) forces the water, which would normally cover the pipette if it returned slowly, to overflow. This water covers the water which is inside tank (7) (volume of about 20 cm<sup>3</sup>) which empties through pipe (8) and adds to it the amount missing to achieve an overflow through lips (4), thus preventing dirty water from entering the open-turn elbow (2).
- 10 The collector of unused water functions extremely effectively even with a very small water flow, of the order of 2.8 L/min., and the lowest tap possible. It is designed so as to have its maximum performance at little and medium water flow (small and medium tap opening), as shown in the output curve of Figure 2. As for the particular cases where there is a drain of bigger cross-section in the kitchen sink
- 15 (e.g., existence of a garbage disposal unit) and the path of the outflow mouth of the tap happens to pass close to the periphery of the drain so that the four anti-skid legs (14) of the head of the collector cannot be solidly attached when it is placed under the mouth of the tap, a simple ring of bigger diameter than the base of the collector is placed on the base of the collector (13), thus moving the four anti-skid legs to a
- 20 new base of a bigger diameter.

Also, in case the column of water is too close to the walls of the sink, a short bent tube can be placed in such a way as to reach and fit the water inlet of the head of the collector (1).

- 25 Finally, in case of great inclination of the tap, it is suggested that a short bent extension be placed at the end of the tap to achieve better verticality.  
Figure (3) illustrates certain facts pertaining to specific everyday household uses. The measurements were made with conservative use of a simple tap whose outflow

mouth was 39 cm. above the bottom of the sink. The water supply network pressure was 1.8 BAR at periods of rest and the internal diameter of the two open-turn elbows (2) and (5) as well as that of the flexible pipe (3) was 10 mm. These measurements did not take into account the fact that in each of the uses, as long as 5 they were not too close to each other in time, there is an amount of water added to the collected one due to the wait for hot water during the winter.

The overall consumption of water, regardless of use, is indicative as it depends exclusively on the user. The numbers in the other columns are interesting.

- 10 Looking, for example, at the use – face washing – we see that when we consume 3.3L, only 0.8L are used for the actual use. The remaining 2.5L are wasted during the intermediate times. The collector of unused water can collect the 1.6L of these 2.5L. We, therefore, save 64% of the water which was not used in this particular use or a 48.5% economy in the water in the overall use of the paradigm without 15 shortening the time of use. In case there is a period of wait for hot water, the amount of collected water is much greater.

- The collector of unused water is suitable both for household use (kitchen, bathroom) and for spaces of personal hygiene in small and big factories, etc., 20 without it being binding.

The collector of unused water is a device of small volume, light, handy and can be installed in all kinds of lavatory washbowls, kitchen sinks or places having to do with personal hygiene. The only thing a user has to do, is to place the head of the 25 collector of unused water under the tap. The head of the collector can be moved and placed beside the tap, e.g., when we want to clean the place, very simply and easily.

The collector of unused water is a device with low manufacturing cost, simple and in need of no maintenance.

There are various solutions to the problems of storage and distribution of the water. The size and the shape of the tank(-s) as well as the hauling of the water are variables which we can modify to suit the solution we wish to achieve. The use of bigger spaces such as the lower part of the bathtub or the washbowl gives us the  
5 ability to store more liters of water. The use of small pumps or pumps controlled by pressureless mechanisms to haul the water further away or to higher points such as the water tank in the closet above the lavatory allows us greater flexibility.

Of course, the simple and economical solution of placing a bucket by the collection  
10 point for immediate use is by no means ruled out.

Below are described two ways of application of the invention, with references to the drawings, which are in no way restrictive.

15 Example 1

Application in household use

In the bathroom (Figure 4)

The layout shows: the collector of unused water, two 10L tanks (suggested dimensions: 0.20x0.35x0.15m.), a plastic pipe and a water level switch. The height  
20 of the tank (2) is less or equal to the difference between the height of the lip of the washbowl from the floor and the height of the level of the water in the water-closet from the floor. The water is gathered by the collector of unused water and driven to tank (2). The water stored in this tank is exclusively for the flush water-closet. When this is filled, the water overflows and fills tank (3) from which it can be used  
25 to clean the house, for instance.

When the water from the water-closet empties, switch (4) opens and the water from tank (2) empties into the water-closet due to gravity.

The amount of water which can be collected in the bathroom in a family of four can be deduced approximately by using the facts in the last column of Figure 3:

hand washing	8 uses x 1.2L	= 9.6L
face washing	8 uses x 1.6L	= 12.8L
teeth brushing	8 uses x 1.2L	= 9.6L
shaving	2 uses x 1.0L	= 2.0L
wait for hot water	estimated	= 5.0L
house cleaning intermediate	5 uses x 1.2L	= 6.0L
uses		
		Total      45L

#### In the kitchen (Figure 5)

- 5 The collection and storage of water in the kitchen is done in a similar way. The tank can be installed underneath the kitchen sink. A sluice valve is fitted in the lower part of the tank, from which we can get the collected water. The quantity of the water gathered in the kitchen of a house of a family of four, which uses a dishwasher, has been measured and it amounts, overall, for a whole day, to  
10 approximately 25L.

Therefore, the water collected daily appears to be in the order of 70L. This means that with the water we have collected we can cover our daily needs for the water-closet (with rational use) and the cleaning of the house.

15

For a family of four with an average consumption of  $35\text{m}^3$  per quarter, this amounts to a water economy of  $70\text{L} \times 120 \text{ days} = 8,400\text{L}$ , or  $8.4\text{m}^3$ , which amounts to a 24% reduction in the overall consumption of water.

20 Example 2

In places of personal hygiene in large and small factories, etc.

Due to the nature of the work, most of the time individual hygiene is particularly time-consuming and, consequently, the quantity of the collected water is large. The water can be collected with lined-up collectors of unused water and led to a common pipe which will fill a water tank that will supply the bathrooms or other  
5 needy places of the enterprise. The layout is shown in Figure 6.

**CLAIMS**

1. A collector of unused water consisting of the head and the remaining part. The head consists of two spherical sections: 1) a small one (12) which constitutes the upper part of the head of the collector and is simultaneously a) a regulator of the 5 incoming water, having in its center a through hole (1) whose lips are curved at the top, b) a water tank (7), having an inlet (8) during the filling and an outlet (9) with overflow for the filling of the inlet pipe (2) with water and part of the flexible pipe (3) and c) a water disturbance absorber (6) from below. 2) A big one (13), which is the base of the head of the collector, carrying four anti-skid legs (14) and an open-10 turn pipe (2) whose upper lips are slightly curved (4), which is connected to the water tank (7) with a small cross-section pipe (8).

The remaining part consists of a very flexible pipe (3) connecting the head to the drain, which consists of a pipe (10) inside which there is an open-turn elbow (5) with an extension along the run of the pipe (10) and a side inlet. In the upper part of 15 the pipe (10) there is an overflow valve (11). The drain is connected, with or without a flexible pipe, to the water storage tank.

It is characterized by the fact that it can collect the pure unused water wasted during the intermediate stages of a use and to lead it to the storage place.

20

2. A collector of unused water according to claim 1, which is characterized by the fact that it has a base ring to better secure it in case of a larger cross-section drain.
3. A collector of unused water according to claims 1 and 2, which is characterized 25 by the fact that it has a short bent extension which can fit in the tap to improve the verticality of the column of water.
4. A collector of unused water according to claims 1-3, which is characterized by the fact that it has a bent inlet water pipe which can fit in the water inlet of the

upper part of the collector to draw water in case the column of the water is close to the walls of the washbowl.

5. A collector of unused water according to claims 1-4, which is characterized by  
5 the fact that it has small similar tanks that can be combined or used separately.

6. A collector of unused water according to claims 1-4, which is characterized by  
the fact that it has a large capacity tank which occupies the empty space of, for  
instance, the lower part of the bathtub or the back side of the washbowl and the  
10 collected water is better utilized with the use of a small pump or a pump controlled  
by a pressureless mechanism.

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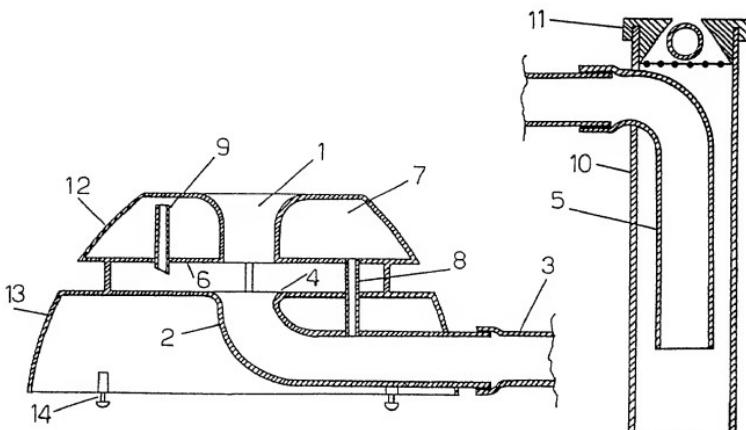


FIGURE 1

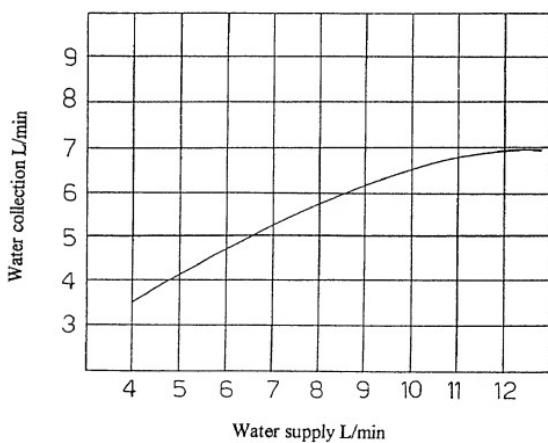


FIGURE 2

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Use	Overall water consumption	Overall time	Time of actual use	Water for actual use	Collected water
hand washing	2,8L	20''	5''	0,8L	1,2L
face washing	3,3L	24''	5''	0,6L	1,6L
teeth brushing	3,0L	22''	7''	1,1L	1,2L
shaving	5,0L	36''	23''	3,6L	1,0L
wait for hot water	2,1L	15''	—	—	1,2L

FIGURE 3

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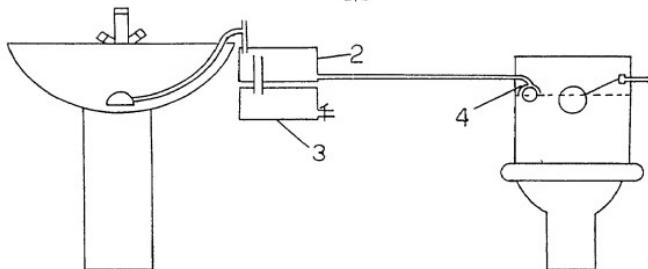


FIGURE 4

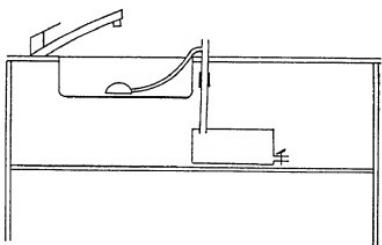


FIGURE 5

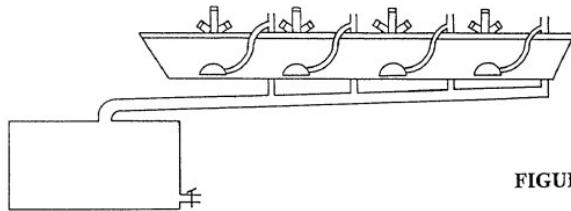


FIGURE 6

**DECLARATION FOR PATENT APPLICATION**

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name; I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

**COLLECTOR OF UNUSED WATER as described and claimed in PCT/**

**GR99/00024 filed July 5, 1999**

the specification of which (check one):  is attached hereto;  was filed on ~~XXXXXX/XXXX/XXXX~~ and was amended on ~~XXXXXX/XXXX/XXXX~~ as Application Serial No. ~~XXXXXX/XXXX/XXXX~~ and was amended on ~~XXXXXX/XXXX/XXXX~~ through ~~XXXXXX/XXXX/XXXX~~ (if applicable). I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment(s) referred to above. I acknowledge the duty to disclose information which is material to patentability in accordance with Title 37, Code of Federal Regulations, §1.56(e). I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or Inventor's certificate having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)			Priority Claimed
(Number)	(Country)	(Day/Month/Year Filed)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
(Number)	(Country)	(Day/Month/Year Filed)	<input type="checkbox"/> Yes <input type="checkbox"/> No
(Number)	(Country)	(Day/Month/Year Filed)	<input type="checkbox"/> Yes <input type="checkbox"/> No
(Number)	(Country)	(Day/Month/Year Filed)	<input type="checkbox"/> Yes <input type="checkbox"/> No
(Number)	(Country)	(Day/Month/Year Filed)	<input type="checkbox"/> Yes <input type="checkbox"/> No
(Number)	(Country)	(Day/Month/Year Filed)	<input type="checkbox"/> Yes <input type="checkbox"/> No
(Number)	(Country)	(Day/Month/Year Filed)	<input type="checkbox"/> Yes <input type="checkbox"/> No

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56(c) which occurred between the filing date of the prior application and the national or PCT International filing date of this application:

(Application Serial No.) (Filing Date) (Status - Patented, Pending or Abandoned)

(Application Serial No.) (Filing Date) (Status - Patented, Pending or Abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

  
NAOUM Dimitrios  
Tz. SARATSI STR.  
GR-551 32 KALAMARIA  
GREECE

**POWER OF ATTORNEY**

I (we) hereby appoint Bruce L. Adams, Registration No. 25,386, Van C. Wilks, Registration No. 25,027 and Franco S. De Liguro, Registration No. 36,497 whose post office address is: Adams & Wilks, 50 Broadway, 31st Floor, New York, New York 10004, as my (our) attorneys with full power of substitution and revocation, to prosecute this application, and to transact all business in the United States Patent and Trademark Office connected therewith.

<u>Full Name of First or Sole Inventor</u>  <u>NAOUM, Dimitrios</u>	<u>Citizenship</u>  <u>GREEK</u>
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<u>State or Country</u>  <u>GREECE</u>	<u>State or Country</u>
<u>Date</u>  <u>15th of December 2000</u>	<u>Signature</u>  